



## Original Communication

## Road traffic suicides

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## ABSTRACT

A prospective observational study of fatal road traffic collisions in south-east Scotland between 1993 and 2003 revealed 17 cases (2.8% of all road fatalities) which appeared to be the result of suicide. In all 17 cases the judgement that the death was the result of suicide reflected the combination of a consistent mechanism of injury with supporting background information. The 17 individuals comprised 13 car drivers and four pedestrians. Ten of the individuals had a past history of mental illness. Only three (18%) survived to reach hospital alive. Analysis of the injuries revealed nine individuals to have unsurvivable injuries (defined by Abbreviated Injury Scale of six, Injury Severity Score of 75). The number of road traffic suicides may be generally underestimated. They appear to be difficult to prevent.

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## 1. Introduction

The phrase “road traffic accident” has become so ingrained in modern speech that it trips off the tongue and is employed universally. The use of the phrase is accompanied by an almost tacit acceptance of the inevitability that such events will occur, and therefore also inevitably, some deaths. Despite a reduction in the number of deaths during the past thirty years, the number of “road traffic accident deaths” remains really quite a serious problem in Great Britain. In 2006 there were 3172 deaths on the roads.<sup>1</sup>

Not before time, special efforts have been made recently to try to focus attention on road traffic deaths. The aim of reducing deaths from accidents, particularly “road accidents”, has been a continuing focus of the UK government.<sup>2,3</sup> The trends in road traffic deaths do show decreases in recent times, but there is no room for complacency, as the overall figures are still very high. Those professionals who are striving to try to prevent such deaths believe that the very use of the term “accident”, particularly when applied to the roads, has resulted in an unreasonable complacency and acceptance of inevitability. As a result, many now prefer to use the term “injury” rather than “accident”, so that “road traffic accidents” have now become “road traffic collisions”.

Injury prevention researchers have long since objected to the use of the word “accident”, in that it implies an event occurring by chance, without apparent cause, from which the obvious implication is that it is not preventable. The other implication of the

word “accident” is that it was an event which occurred unintentionally. In the context of road traffic deaths, perhaps widespread use of the word “accident” has also lulled everyone into assuming that all such deaths are unintentional. Despite obvious and important medicolegal implications, little consideration has been given in the literature to the possibility of a significant proportion of these deaths being intentional (homicides or suicides). In order to investigate the true potential for reducing road traffic deaths, intentional deaths also need to be considered. The focus of this paper is to examine the rate and circumstances surrounding apparently suicidal deaths in south-east Scotland.

## 2. Materials and methods

A prospective study at the Forensic Medicine Unit of the University of Edinburgh enabled identification of road traffic deaths in south-east Scotland between 1993 and 2003. A cross-check was performed against records held by the Registrar General in order to ensure that the dataset was complete.

Detailed background information was available for each death, using a variety of sources including police reports prepared upon the instructions of the Procurator Fiscal, ambulance records and hospital case notes. The most important data sources were the police reports, which contained eyewitness accounts of events leading up to the collisions, descriptions of the scenes where the incidents occurred, the prevailing weather and road conditions, together with a summary of the positions of the deceased persons and wreckage. Scrutiny of these data allowed a judgement to be made as to which deaths which appeared to be suicides, rather

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than “accidents” or homicides. In keeping with previous research, a judgement of suicide was made when there was supporting evidence both in terms of the circumstances of the collision (e.g. car driven at high speed into a bridge parapet with no evidence of braking) and in terms of the background information (e.g. recently stated suicidal intention or suicide note).<sup>4</sup>

Autopsies were performed on the instructions of the Procurator Fiscal by the Forensic Medicine Unit of the University of Edinburgh on all road traffic deaths in Lothian and Borders regions. The autopsies were performed in a detailed and standardized fashion, in which all injuries were measured and recorded in a detailed fashion and body fluid samples were examined for toxicological analysis. The injuries sustained by all those who died after an apparent road traffic suicide were extracted from autopsy records and where appropriate, from hospital case records. All injuries were scored according to the Abbreviated Injury Scale (1990 revision), allowing injury Severity Scores to be generated for each person.<sup>5,6</sup> The role of injury severity scoring for the forensic analysis of the severity and patterns of injury after trauma has been increasingly recognised in recent years.<sup>7,8</sup>

### 3. Results

Of 597 road traffic deaths, 17 (2.8%) appeared to be suicides. The 17 individuals comprised 12 men and five women, with an average age of 46.2 years, and a range of 20–67 years. The 17 suicides comprised two distinct groups: four pedestrians and 13 car drivers. One of the 13 “car driver suicides” involved an individual initially crashing into a bridge parapet before becoming a pedestrian who walked out directly into the path of a lorry. Details of how the deaths occurred are shown in Table 1. The methods chosen in seven of the deaths directly involved another person, also placing them potentially at risk of injury (Table 1). Despite this risk, no else was killed or seriously injured in these collisions. The background factors implicated in precipitating the suicides included the following factors: a previous diagnosis of “depression” (seven patients), other psychotic illness (three patients), chronic alcohol problems (two patients), acute relationship crisis (two patients), financial and/or work problems (two patients), impending major court case (one patient) and life-threatening chronic illness (one patient).

Toxicology on body fluids was performed in 12 cases (71%), revealing that only two of these had significant levels of alcohol within the bloodstream, with these individuals having blood alcohol levels of 242 and 175 mg per decilitre (for comparison, the current UK legal limit for driving is 80 mg per decilitre). Evidence of illicit drugs was not found, but one of the car drivers who died

was found to have the antidepressant dothiepin in the bloodstream at a level within the fatal range.

Fourteen of the individuals (82%) died before reaching hospital. The three individuals who survived to reach hospital alive included two pedestrians. Injury Severity Scores were calculated according to the Abbreviated Injury Scale for all except the car driver who drowned, yielding scores ranging from 38 to 75, as shown in Table 2. The nine patients with Injury Severity Scores of 75 had a total of 13 separate injuries acknowledged to be unsurvivable (Abbreviated Injury Scale of six), including six complete transection of the thoracic aorta and four unsurvivable injuries to the brain and/or medulla/upper cervical spinal cord.

### 4. Discussion

It has been recognised for many years that there are some suicides resulting from road traffic collisions,<sup>9,10</sup> with particular suspicion falling upon those cases involving single occupant single-car road deaths.<sup>11–14</sup> The circumstances surrounding the 17 suicides in this study are mostly in keeping with previous reports, with the one unusual mechanism being the vehicle-assisted drowning. It is noteworthy in this respect that despite a preponderance of apparently “straightforward” suicidal road crashes, there are also previous case reports of other unusual vehicle-assisted suicides.<sup>15,16</sup>

It can be difficult, but potentially important, to ascertain with certainty whether a road traffic death was suicidal or unintentional. For those wishing to disguise suicide as an “accident”, road traffic suicide may appear an attractive option. There are potentially compelling reasons why some individuals may wish to try to conceal their own suicide – the most obvious relating to life insurance cover and the elimination of the stigma of suicide for their families. Railway deaths amongst non-railway workers are usually immediately suspected of being suicides,<sup>17</sup> whereas the starting point for anyone who dies on the road is that it was a fatal road traffic “accident”. However, there are interesting parallels with suspected suicides from aircraft crashes, where cases typically involve lone pilots in more obviously destructive crashes situated away from the airport.<sup>18</sup>

Data from this study suggest that the proportion of clearly suicidal deaths amongst all road traffic fatalities is 2.8%. This figure is in keeping with data from elsewhere.<sup>4</sup> However, given the difficulties in establishing exactly what was in the mind of the person who died, it must be acknowledged that this is necessarily only an approximate figure and it seems likely that as with deaths from high falls, this significantly underestimates the size of the problem.<sup>19,20</sup>

Apart from disguising suicide as an “accident”, it is interesting to consider why an individual might contemplate using a road traffic collision as a means of committing suicide. There is a common assumption that people tend to choose those methods which are most easily available to them. Whilst this may apply to certain methods, such as gunshot suicides, the widespread availability of motor vehicles implies that other factors are more important when an individual contemplates road traffic suicide. What distinguishes road traffic suicide, however, is that the chosen method potentially places others (usually unknown) at risk – this applied to seven cases in this series. Perhaps the distressed state of the person contemplating this method of suicide underlines the fact that they are unable to focus on the needs of others. This seems a more likely explanation than them having a deliberate urge to harm others as well as themselves, as dyadic deaths appear to be rare in the context of road deaths. There are, however, well-published reports of individuals who wish to kill themselves and (perhaps inadvertently) kill others as well in the process. An example of this was the suicide of a car driver in Berkshire in England in 2004 who

**Table 1**  
Circumstances of the deaths.

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<i>Pedestrian suicides</i>	
Ran out in front of a light van	2 <sup>a</sup>
Ran out in front of an articulated lorry	2 <sup>a</sup>
<i>Car driver suicides</i>	
Drove car into a bridge parapet	3
Drove car into a tree	2
Drove car into a stationary parked lorry	2 <sup>a</sup>
Swerved over the road to collide with an oncoming lorry	1 <sup>a</sup>
Drove car off docks into deep water	1
Drove into a wall	1
<i>Car driver and pedestrian combined</i>	
Drove into a bridge parapet, got out and walked in front of a lorry	1
<b>Total</b>	<b>17</b>

<sup>a</sup> Indicates a mechanism of injury potentially placing other individuals at risk.

**Table 2**

Injury Severity Score (ISS) of 16 individuals with scorable injuries according to place of death.

ISS	Dead when found	Alive initially, but died at scene	Reached hospital alive, but died later
0–15	0	0	0
16–24	0	0	0
25–40	0	0	1
41–66	4	0	2
75	8	1	0

deliberately drove onto a level crossing and was hit by a train, resulting in his death and the death of the train driver and five passengers as well.<sup>21</sup> The mismatch between a pedestrian and motor vehicle is clearly considerable, although vehicle driver death has been reported as a result of a collision between the two.<sup>22</sup> The greater risk of injury is likely to relate to collisions which may result from sudden evasive action taken by the driver.

The relatively large number of major and unsurvivable injuries identified in this series reflects the large forces involved in these high speed road traffic collisions and explains why 14 of the 17 individuals did not survive to hospital. Choosing road traffic suicide implies inherent acceptance of a painful and/or disfiguring demise. Violent (painful/disfiguring) methods of suicide have been previously associated with severe mental illness and it is relevant in this respect that a high proportion of individuals in this study had a background of mental illness.<sup>23</sup> Even if there is recognised mental illness, attempting to prevent suicide has long been and remains a considerable challenge.<sup>24–26</sup> This would seem to particularly apply to individuals who choose road traffic collisions as the method of suicide.

#### Conflict of interest statement

None declared.

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#### Ethical approval statement

None declared.

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